

Claims

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

5 1. A low profile bed comprising:

(a) a mattress support frame,

(b) at least one wheel frame pivotably mounted to said mattress support frame for movement between a folded position and an unfolded position,

(c) a leverage member pivotably mounted to said at least one wheel frame,

10 and,

(d) a lift actuator connecting between said mattress support frame and said leverage member, said lift actuator for extending and contracting movement between a retracted position and an extended position, said lift actuator and said leverage member arranged such that initial extension of said lift actuator causes
15 said leverage member to push against said mattress support frame and urge said wheel frame away from said mattress support frame until said wheel frame reaches a partially unfolded position and such that subsequent extension of said lift actuator powers further unfolding of said wheel frame from said partially unfolded position to a fully unfolded position.

20 2. The low profile hospital bed of claim 1 wherein,

said leverage member is pivotably mounted to said wheel frame about a fulcrum disposed between opposite first and second ends of said leverage member and said lift actuator connects between said mattress support frame and said second end of said leverage member, said first end of said leverage member for pushing
5 against said mattress support frame upon said initial extension of said lift actuator.

3. The low profile hospital bed of claim 1 wherein,

said leverage member is pivotably mounted to said wheel frame about a fulcrum disposed between opposite first and second ends of said leverage member
10 and said lift actuator connects between said mattress support frame and said second end of said leverage member, said first end of said leverage member including a roller and said mattress support frame including a roller track member for rolling contact with said roller, the roller for pushing against said roller track member of said mattress support frame upon said initial extension of said lift actuator.

15 4. The low profile hospital bed of claim 1 wherein,

said at least one wheel frame includes two wheel frames pivotably mounted to said mattress support frame and wherein a lift actuator connects between said mattress support frame and a leverage member mounted to each of said wheel
20 frames.

5. The low profile hospital bed of claim 1 wherein,

said at least one wheel frame includes two wheel frames pivotably mounted to said mattress support frame and wherein a lift actuator connects between said mattress support frame and a leverage member mounted to each of said wheel frames, and,

5 each said leverage member is pivotably mounted to said wheel frame about a fulcrum disposed between opposite first and second ends of said leverage member and each said lift actuator connects between said mattress support frame and said second end of one of said leverage members, said first end of each of said leverage members for pushing against said mattress support frame upon said initial extension
10 of each of said lift actuators.

6. The low profile hospital bed of claim 1 wherein,

said at least one wheel frame includes two wheel frames pivotably mounted to said mattress support frame and wherein a lift actuator connects between said
15 mattress support frame and a leverage member mounted to each of said wheel frames, and

each of said leverage members is pivotably mounted to each of said wheel frames about a fulcrum disposed between opposite first and second ends of each of said leverage members and each of said lift actuators connects between said
20 mattress support frame and said second end of one of said leverage members, said first end of each of said leverage members including a roller and said mattress support frame including roller track members for rolling contact with said rollers,

the rollers for pushing against said roller track members of said mattress support frame upon initial extension of said lift actuators.

7. A low profile hospital bed comprising,

5 (a) a mattress support frame,

(b) wheel frames pivotably mounted to said mattress support frame for generally simultaneous pivoting movement between a folded position in which said mattress support frame is at a minimum distance above the floor and a completely unfolded position in which said mattress support frame is at a maximum distance
10 above the floor,

(b) leverage members pivotably mounted to each of said wheel frames, each leverage member having a first end and a second end and pivotably mounted to each of said wheel frames at a fulcrum which is between said first and second ends,

(c) a lift actuator connecting between said mattress support frame and said
15 first end of each said leverage member, each said lift actuator for extending and contracting movement between a retracted position and an extended position, each of said lift actuators and each of said leverage members arranged such that initial extension of said lift actuator causes said second ends of said leverage members to push against said mattress support frame and urge said wheel frames away from
20 said mattress support frame until said wheel frames reach a partially unfolded position and such that said subsequent extension of said lift actuators powers

further unfolding of said wheel frames from said partially unfolded position to a fully unfolded position.

8. The low profile hospital bed of claim 7, wherein,

5 each first end of each said leverage member includes a roller and said mattress support frame includes roller track members for rolling contact with said rollers, the rollers for pushing against said roller track members of said mattress support frame upon initial extension of said lift actuators.

10 9. The low profile hospital bed of claim 7, wherein,

 each first end of each said leverage member includes a roller and said mattress support frame includes roller track members for rolling contact with said rollers, the rollers for pushing against said roller track members of said mattress support frame upon initial extension of said lift actuators.

15 10. The low profile hospital bed of claim 7, wherein,

 each leverage member and each wheel frame are arranged such that each leverage member is free to rotate between a first position to a second position as said wheel frame moves between said folded position and a partially unfolded position and such that each leverage member is prevented from further rotation away from said first position past said second position when said wheel frame moves between said partially unfolded position and said fully unfolded position.

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11. The low profile hospital bed of claim 7, wherein,

each leverage member includes a stop block which interferes with said wheel frame such that each leverage member may rotate between a first position and a second position as said wheel frame moves between said folded position and a partially unfolded position and such that each stop block interferes with said wheel assembly thus preventing said leverage member from further rotation away from said first position past said second position as said wheel frame moves between said partially unfolded position and said fully unfolded position.

11. A method for unfolding a low profile hospital bed having a mattress support frame from a folded position wherein said mattress support frame is supported at a desired minimum distance above a floor to an unfolded position wherein said mattress support frame is supported at a desired maximum distance above said floor, the method comprising the following steps,

(a) providing wheel frames pivotably attached to said mattress support frame,

(b) providing leverage members pivotably attached to said wheel frames for rotating movement between a first position and a second position such that said leverage members push against said mattress support frame and urge said wheel frames away from said mattress support frame as said leverage assemblies rotate from said first position to said second position,

(c) rotating said leverage members from said first position to said second position to cause partial unfolding of said wheel frames to a partially unfolded position,

(d) rotating said wheel frames relative to said mattress support assembly to cause further unfolding of said wheel frames from said partially unfolded position to said unfolded position in which said mattress support frame is supported at a desired maximum distance above the floor.

12. The method of claim 11 including preventing said leverage members from continued rotation past said second position in a direction away from said first position.

13. A method for unfolding a low profile hospital bed having a mattress support frame from a folded position wherein said mattress support frame is supported at a desired minimum distance above a floor to an unfolded position wherein said mattress support frame is supported at a desired maximum distance above said floor, the method comprising the following steps,

(a) providing wheel frames pivotably attached to said mattress support frame,

(b) providing leverage members pivotably attached to said wheel frames for rotating movement between a first position and a second position, said leverage members arranged to push against said mattress support frame and urge said wheel

frames away from said mattress support frame as said leverage assemblies rotate from said first position to said second position,

(b) rotating leverage member rotate between said first position and said second position in order to urge said wheel frames into a partially unfolded position,

(a) preventing said leverage members from continued rotation relative to said wheel frames past said second position in a direction away from said first position, and,

(c) causing relative motion between said leverage members and said mattress support frame in order to accomplish continued rotation of said wheel frames relative to said mattress support frame until said wheel frames reach said unfolded position in which said mattress support frame is supported at a desired maximum distance above the floor.

14. The method of claim 13 including the additional steps of:

(a) causing reverse relative motion of said leverage members relative to said mattress support frame so that said wheel frames rotate back to said partially unfolded position, and,

(b) causing reverse rotation of said leverage members from said second position to said first position to allow folding of said wheel frames to said folded position in which said mattress support frame is supported at a desired minimum distance above the floor.